



Complete Summary

TITLE

Postoperative wound dehiscence: number of abdominopelvic surgery patients with disruption of abdominal wall per 1,000 eligible admissions.

SOURCE(S)

AHRQ quality indicators. Pediatric quality indicators: technical specifications [version 3.2]. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2008 Feb 29. various p.

McDonald K, Romano P, Davies S, Haberland C, Geppert J, Ku A, Choudhry K. Measures of pediatric health care quality based on hospital administrative data: the pediatric quality indicators. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2006 Sep. 130 p. [82 references]

Measure Domain

PRIMARY MEASURE DOMAIN

Outcome

The validity of measures depends on how they are built. By examining the key building blocks of a measure, you can assess its validity for your purpose. For more information, visit the [Measure Validity](#) page.

SECONDARY MEASURE DOMAIN

Does not apply to this measure

Brief Abstract

DESCRIPTION

This measure is used to assess the number of abdominopelvic surgery patients with disruption of abdominal wall per 1,000 eligible admissions.

RATIONALE

This indicator is intended to flag wound dehiscence in patients who have undergone abdominal and pelvic surgery. A specific code is available to detect wound dehiscence in this patient population. The indicator is restricted to secondary diagnoses, and is intended to capture cases occurring within the same

hospitalization. High quality surgical technique may reduce the risk for this complication.

PRIMARY CLINICAL COMPONENT

Postoperative wound dehiscence; abdominopelvic surgery

DENOMINATOR DESCRIPTION

All abdominopelvic surgical discharges under age 18

Exclude cases:

- where a procedure for reclosure of postoperative disruption of abdominal wall occurs before or on the same day as the first abdominopelvic surgery procedure (*Note: If day of procedure is not available in the input data file, the rate may be slightly lower than if the information was available.*)
- where length of stay is less than 2 days
- with high- or intermediate-risk immunocompromised state
- newborns with birth weight less than 500 grams
- with procedure code for gastroschisis or umbilical hernia repair in newborns (omphalacele repair) performed before reclosure
- Major Diagnostic Category (MDC) 14 (pregnancy, childbirth, and puerperium)

Note: Refer to the original measure documentation for specific Diagnosis Related Groups (DRGs) and International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) codes.

NUMERATOR DESCRIPTION

Discharges among cases meeting the inclusion and exclusion rules for the denominator with International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) code for reclosure of postoperative disruption of abdominal wall (54.61) in any procedure field

Evidence Supporting the Measure

EVIDENCE SUPPORTING THE CRITERION OF QUALITY

- A formal consensus procedure involving experts in relevant clinical, methodological, and organizational sciences
- One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

Evidence Supporting Need for the Measure

NEED FOR THE MEASURE

Variation in quality for the performance measured

EVIDENCE SUPPORTING NEED FOR THE MEASURE

Agency for Healthcare Research and Quality (AHRQ). National healthcare quality report. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2003.

Miller MR, Elixhauser A, Zhan C. Patient safety events during pediatric hospitalizations. Pediatrics2003 Jun;111(6 Pt 1):1358-66. [PubMed](#)

Miller MR, Zhan C. Pediatric patient safety in hospitals: a national picture in 2000. Pediatrics2004 Jun;113(6):1741-6. [32 references] [PubMed](#)

Sedman A, Harris JM 2nd, Schulz K, Schwalenstocker E, Remus D, Scanlon M, Bahl V. Relevance of the Agency for Healthcare Research and Quality Patient Safety Indicators for children's hospitals. Pediatrics2005 Jan;115(1):135-45. [17 references] [PubMed](#)

State of Use of the Measure

STATE OF USE

Current routine use

CURRENT USE

Internal quality improvement
Quality of care research

Application of Measure in its Current Use

CARE SETTING

Hospitals

PROFESSIONALS RESPONSIBLE FOR HEALTH CARE

Physicians

LOWEST LEVEL OF HEALTH CARE DELIVERY ADDRESSED

Single Health Care Delivery Organizations

TARGET POPULATION AGE

Age less than 18 years

TARGET POPULATION GENDER

Either male or female

STRATIFICATION BY VULNERABLE POPULATIONS

Unspecified

Characteristics of the Primary Clinical Component

INCIDENCE/PREVALENCE

Post-operative abdominopelvic wound dehiscence is an issue of concern in the pediatric surgical population. Other groups have analyzed rates of this indicator using the publicly available indicator definition applied to a pediatric population; this definition differs slightly from the definition proposed for this measure. The incidence of post-operative wound dehiscence was investigated in pediatric patients in several studies (e.g., 1.25 per 1,000 discharges at 0 to 17 years, 1.74 at 18 to 44 years, 2.65 at 45 to 65 years, and 3.77 at 65 or more years. Healthcare Cost and Utilization Project (HCUP) data from 1997 showed a rate of 2.9 per 10,000 discharges for a broader definition of post-operative wound disruption (based on either a diagnosis code or a procedure code). Using HCUP data from 2000, a rate of 8 per 10,000 discharges was seen for the complication of postoperative wound dehiscence in pediatric patients 0 to 18 years of age. Additionally, it was found that this complication resulted in an increased mean length of stay (by 21.1 days) and \$76,737 in increased charges in affected patients, with 5.7 times higher odds of in-hospital mortality (after adjusting for age, gender, expected payer, up to 30 comorbidities, and multiple hospital characteristics, including ownership, teaching status, nursing expertise, urban location, bed size, pediatric volume, coding intensity, intensive care unit (ICU) bed percentage, and surgical discharge percentage). Sedman et al found a range of observed rates for post-operative wound dehiscence from 1.7 per 1,000 in 2002 to 1.2 per 10,000 in 1999 using National Association of Children's Hospitals and Related Institutions (NACHRI) data (i.e., a slight downward trend over time).

EVIDENCE FOR INCIDENCE/PREVALENCE

Agency for Healthcare Research and Quality (AHRQ). National healthcare quality report. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2003.

Miller MR, Elixhauser A, Zhan C. Patient safety events during pediatric hospitalizations. *Pediatrics*2003 Jun;111(6 Pt 1):1358-66. [PubMed](#)

Miller MR, Zhan C. Pediatric patient safety in hospitals: a national picture in 2000. *Pediatrics*2004 Jun;113(6):1741-6. [32 references] [PubMed](#)

Sedman A, Harris JM 2nd, Schulz K, Schwalenstocker E, Remus D, Scanlon M, Bahl V. Relevance of the Agency for Healthcare Research and Quality Patient Safety Indicators for children's hospitals. *Pediatrics*2005 Jan;115(1):135-45. [17 references] [PubMed](#)

ASSOCIATION WITH VULNERABLE POPULATIONS

See the "Incidence/Prevalence" field.

BURDEN OF ILLNESS

See the "Incidence/Prevalence" field.

UTILIZATION

See the "Incidence/Prevalence" field.

COSTS

See the "Incidence/Prevalence" field.

Institute of Medicine National Healthcare Quality Report Categories

IOM CARE NEED

Getting Better

IOM DOMAIN

Effectiveness
Safety

Data Collection for the Measure

CASE FINDING

Users of care only

DESCRIPTION OF CASE FINDING

All abdominopelvic surgical discharges under age 18 (see the "Denominator Inclusions/Exclusions" field)

DENOMINATOR SAMPLING FRAME

Patients associated with provider

DENOMINATOR INCLUSIONS/EXCLUSIONS

Inclusions

All abdominopelvic surgical discharges under age 18

Exclusions

Exclude cases:

- where a procedure for reclosure of postoperative disruption of abdominal wall occurs before or on the same day as the first abdominopelvic surgery procedure (*Note: If day of procedure is not available in the input data file, the rate may be slightly lower than if the information was available.*)
- where length of stay is less than 2 days

- with high- or intermediate-risk immunocompromised state
- newborns with birth weight less than 500 grams
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Note: Refer to the original measure documentation for specific Diagnosis Related Groups (DRGs) and International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) codes.

RELATIONSHIP OF DENOMINATOR TO NUMERATOR

All cases in the denominator are equally eligible to appear in the numerator

DENOMINATOR (INDEX) EVENT

Clinical Condition
Institutionalization
Therapeutic Intervention

DENOMINATOR TIME WINDOW

Time window is a single point in time

NUMERATOR INCLUSIONS/EXCLUSIONS

Inclusions

Discharges among cases meeting the inclusion and exclusion rules for the denominator with International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) code for reclosure of postoperative disruption of abdominal wall (54.61) in any procedure field

Exclusions

Unspecified

MEASURE RESULTS UNDER CONTROL OF HEALTH CARE PROFESSIONALS, ORGANIZATIONS AND/OR POLICYMAKERS

The measure results are somewhat or substantially under the control of the health care professionals, organizations and/or policymakers to whom the measure applies.

NUMERATOR TIME WINDOW

Institutionalization

DATA SOURCE

Administrative data

LEVEL OF DETERMINATION OF QUALITY

Not Individual Case

OUTCOME TYPE

Adverse Outcome

PRE-EXISTING INSTRUMENT USED

Unspecified

Computation of the Measure

SCORING

Rate

INTERPRETATION OF SCORE

Better quality is associated with a lower score

ALLOWANCE FOR PATIENT FACTORS

Analysis by high-risk subgroup (stratification on vulnerable populations)
Analysis by subgroup (stratification on patient factors, geographic factors, etc.)
Risk adjustment method widely or commercially available

DESCRIPTION OF ALLOWANCE FOR PATIENT FACTORS

Risk adjustment of the data is recommended using, at minimum, birthweight, age in days, age and AHRQ Clinical Classification Software*.

Application of multivariate signal extraction (MSX) to smooth risk adjusted rates is also recommended.

***Note:** Information on the Clinical Classification Software (CCS) for ICD-9-CM is available at <http://hcup-us.ahrq.gov/toolssoftware/ccs/ccs.jsp>.

STANDARD OF COMPARISON

Internal time comparison

Evaluation of Measure Properties

EXTENT OF MEASURE TESTING

The development of the Agency for Healthcare Research and Quality (AHRQ) Pediatric Quality Indicators utilizes a four pronged approach: identification of candidate indicators, literature review, empirical analyses, and panel review. Candidate indicators were identified through both published literature and a brief

survey of national organizations. Literature review provided descriptions and evaluations of some candidate indicators and the underlying relationship to quality of care. Empirical analyses were conducted to explore alternative definitions; to assess nationwide rates and hospital variation; and to develop appropriate methods to account for variation in risk. Clinical panel review helped to refine indicator definitions and risk groupings, and to establish face validity in light of the limited evidence from the literature for most pediatric indicators. Information from these sources was used to specify indicator definitions and make recommendations to AHRQ regarding the best indicators for inclusion in the pediatric indicator set.

A structured review of each indicator was undertaken to evaluate face validity (from a clinical perspective). This process mirrored that undertaken during the initial development of the Patient Safety Indicators. Specifically, the panel approach established *consensual validity*, which "extends face validity from one expert to a panel of experts who examine and rate the appropriateness of each item...." The methodology for the structured review was adapted from the RAND/UCLA Appropriateness Method and consisted of an initial independent assessment of each indicator by clinician panelists using an initial questionnaire, a conference call among all panelists, followed by a final independent assessment by clinician panelists using the same questionnaire. The panel process served to refine definitions of some indicators, add new measures, and dismiss indicators with major concerns from further consideration.

Empirical analyses were conducted to provide the clinical panels and peer review participants with additional information about the indicators. These analyses were also used by the development team to test the alternative specifications and the relative contribution of indicator components in the numerator and denominator. These analyses were not intended to inform issues of precision, bias and construct validity, which will be addressed separately. The data source used in the empirical analyses was the 2003 Kids' Inpatient Sample (KID).

Refer to the original measure documentation for additional details.

EVIDENCE FOR RELIABILITY/VALIDITY TESTING

Fitch K, Bernstein SJ, Aguilar MD, et al. The RAND/UCLA appropriateness method user's manual. Santa Monica (CA): RAND; 2001. 109 p.

Green L, Lewis F. Measurement and evaluation in health education and health promotion. Mountain View (CA): Mayfield Publishing Company; 1998.

McDonald K, Romano P, Davies S, Haberland C, Geppert J, Ku A, Choudhry K. Measures of pediatric health care quality based on hospital administrative data: the pediatric quality indicators. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2006 Sep. 130 p. [82 references]

Identifying Information

ORIGINAL TITLE

Postoperative wound dehiscence (PDI 11).

MEASURE COLLECTION

[Agency for Healthcare Research and Quality \(AHRQ\) Quality Indicators](#)

MEASURE SET NAME

[Agency for Healthcare Research and Quality \(AHRQ\) Pediatric Quality Indicators](#)

DEVELOPER

Agency for Healthcare Research and Quality

ENDORSER

National Quality Forum

ADAPTATION

This measure was adapted from the AHRQ Patient Safety Quality Indicators.

PARENT MEASURE

Postoperative Wound Dehiscence, Provider Level (PSI 14) (Agency for Healthcare Research and Quality [AHRQ])

RELEASE DATE

2006 Feb

REVISION DATE

2008 Feb

MEASURE STATUS

This is the current release of the measure.

SOURCE(S)

AHRQ quality indicators. Pediatric quality indicators: technical specifications [version 3.2]. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2008 Feb 29. various p.

McDonald K, Romano P, Davies S, Haberland C, Geppert J, Ku A, Choudhry K. Measures of pediatric health care quality based on hospital administrative data: the pediatric quality indicators. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2006 Sep. 130 p. [82 references]

MEASURE AVAILABILITY

The individual measure, "Postoperative Wound Dehiscence (PDI 11)," is published in "Measures of Pediatric Health Care Quality Based on Hospital Administrative Data: The Pediatric Quality Indicators" and "AHRQ Quality Indicators. Pediatric Quality Indicators: Technical Specifications [version 3.2]." These documents are available in Portable Document Format (PDF) from the [Pediatric Quality Indicators Download](#) page at the Agency for Healthcare Research and Quality (AHRQ) Quality Indicators Web site.

For more information, please contact the QI Support Team at support@qualityindicators.ahrq.gov.

COMPANION DOCUMENTS

The following are available:

- AHRQ quality indicators. Pediatric quality indicators: software documentation [version 3.2] - SAS. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2008 Mar 10. 40 p. This document is available in Portable Document Format (PDF) from the [AHRQ Quality Indicators Web site](#).
- AHRQ quality indicators. Software documentation: Windows [version 3.1a]. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2007 Apr 6. 99 p. This document is available in PDF from the [AHRQ Quality Indicators Web site](#).
- Pediatric quality indicators (PedQI): covariates [version 3.1]. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2007 Mar 12. 52 p. This document is available in PDF from the [AHRQ Quality Indicators Web site](#).
- Pediatric quality indicators (PedQI): covariates (with POA) [version 3.1]. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2007 Mar 12. 52 p. This document is available in PDF from the [AHRQ Quality Indicators Web site](#).
- HCUPnet. [internet]. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2004 [accessed 2007 May 21]. [Various pagings]. HCUPnet is available from the [AHRQ Web site](#). See the related [QualityTools](#) summary.

NQMC STATUS

This NQMC summary was completed by ECRI Institute on December 28, 2007. The information was verified by the measure developer on March 31, 2008.

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